REMARKS

In the Claims:

Independent claims 1 and 16 have been amended to further clarify the distinction between data relating to a product measured by an on-line analyzer and reactor process variables. It is now clarified that a reactor variable, as that term is used by Applicants, is not a product physical measurement obtained at or near the on-line analyzer. Specific support for that amendment is found in the Specification at page 4, lines 7-11.

Further, claim language has been rearranged and reformatted for further clarity.

Rejections Under 35 USC 102:

Claims 1, 4-6, 13-17, 20-22 and 27 were rejected under 35 USC 102(b) over McDonald et al., U.S. Patent 6,072,576.

Rejections Under 35 USC 103:

Claims 2 and 26 were rejected under 35 USC 103(a) over McDonald et al. in view of Kilius et al., U.S. Patent 5,324,755.

Claims 3, 7, 8, and 23-25 were rejected under 35 USC 103(a) over McDonald et al. in view of Dechene et al., U.S. Patent 5,408,181.

Claims 9 and 10 were rejected under 35 USC 103(a) over McDonald et al. in view of Dechene et al. as applied to claims 1, 5, and 8, and further in view of Kilius et al..

Claims 11 and 12 were rejected under 35 USC 103(a) over McDonald et al. in view of Dechene et al. and Kilius et al. as applied to claims 1, 5, 8, and 9 above, and further in view of Stephens et al., U.S. Published Application 2003/0073787.

Claims 18 and 19 were rejected under 35 USC 103(a) over McDonald et al. in view of Bowden et al., U.S. Patent 3,976,981.

Applicants' Arguments

Applicants continue to believe the claim rejections based on McDonald et al. are due to a mischaracterization of the teachings of McDonald et al. with respect to Applicants' claims. The amendments submitted in this and the previous paper are meant to clarify the distinctions between Applicants' invention and McDonald et al.

Applicants believe that a more detailed analysis of McDonald et al. will be beneficial in understanding the distinctions between this cited reference and Applicants' claimed invention.

As stated in the latest Office Action, "McDonald et al. teach using an analyzer to measure a property of a chemical process, developing scores with the measured data and regressing the scores with a viscosity or temperature of the product to predict a property of interest."

As indicated in this document at col. 4, lines 1-18, three measured values are obtained, which are designated as **N**, **P**, and **O**. **N** represents spectral data obtained from the output of an FTNIR spectrometer, **P** represents a viscosity measurement on the polymer product, and **O** represents a temperature measurement of that polymer product. In each case, McDonald et al. state that these data are "used by the process control computer, as described below."

What is described below is stated at col. 3, lines 33:

> "The outputs **N**, **O**, and **P** of the instrumentation assembly are transmitted to a computer that analyzes the measurements, as discussed below, and predicts properties of the finished product that could be expected from the process."

The data analysis is further described at col. 4, line 43, to col. 7, line 17. The description in McDonald et al. at col. 6, line 64, to col. 7, line 17, demonstrate that the measurements taught in that document relate to product properties and not to reactor process variables (as that term is used in Applicants' claimed invention). McDonald et al. describe the additional measurements which are regressed against scores derived from spectral data are "properties and/or composition data." Further, this description concludes by providing exemplifying McDonald et al.'s method as:

"The scores, the measured viscosity product and temperature, and the regression coefficients derived in the calibration process give a prediction of the property under consideration."

This is in distinction to Applicants' method which regresses scores transformed from on-line analyzers with reactor variables. Applicants commented upon their improvement over the method disclosed in McDonald et al. at page 3, lines 19-23 of their specification. The Applicants stated that while the McDonald et al. method "may lead to improved process control in some cases, the industry desires new, more powerful approaches to integrating on-line instrumentation to process control." Such a more powerful approach is the subject of Applicants' claims.

With the clarifying amendment made in this paper, it is now clear that type of reactor variable used in Applicants' claimed invention cannot be the type of measurement used by McDonald et al.

As stated in Applicants' previous response and reiterated here, Applicants take data (obtained from on-line analyzers) relating to a material or product produced in a chemical manufacturing process, transforming scores from such data correlative to a property of interest of the product (which cannot be measured directly by the on-line analyzers), and regressing these scores with statistically significant reactor process variables to generate an estimate of the property of interest.

Applicants point out that the data measured by the on-line analyzers are measured on the product, and should not be confused with reactor process variables, which relate to the process conditions in the reactor. Thus, a temperature of a product in a transfer line from a reactor is not the same as the temperature variable of the reactor.

Specifically, Applicants understand that the Examiner believes the temperature measurements described in McDonald et al. are the same as or must relate to the reactor process variables stated in Applicants' claims. This was not intended, and the amended language is submitted to clarify Applicants' invention. Applicants submit that the amendments only clarify Applicants' original intended scope.

It appears that the Examiner's position is that "the temperature of the product relates to the operation of the reactor and is therefore a reactor process variable." This is speculation and extends beyond the fair teaching of the cited reference. McDonald et al. measure product properties such as viscosity or temperature in a fluid flow stream which is outside the reactor (cf. col. 4, lines 6-18). There is no disclosed direct correlation between the measured product property and a reactor process variable.

In any event, the amendments made in this paper clarify that such product measurements cannot be process variables as described and claimed by Applicants.

Applicants submit that McDonald et al. do not teach or suggest data measured on product (such as viscosity and temperature) are mathematically correlated against reactor process variables as described and claimed by Applicants. The limit of the McDonald et al. disclosure is measuring product properties by on-line analyzers and attempting to correlate those measurements to product properties. Applicants take scores from on-line analyzers correlative to a product property and <u>further</u> regress these scores with one or more statistically significant process variables to obtain a better estimate of the property.

Therefore, Applicants submit that the amendments made herein clearly clarify, the inventive distinction between McDonald et al. and the Applicants' claimed invention.

Applicants submit that use of reactor variables (as that term is used by Applicants) in the claims presented is not described by McDonald et al. and thereby a rejection under 35 USC 102(b) for claims 1, 4-6, 13-17, 20-22 and 27 cannot be maintained.

Further, the combinations of McDonald et al. with the other cited documents do not suggest use of reactor variables (again as that term is used by Applicants) in the claimed method. Thus, the further rejections under 35 USC 103(a) cannot be maintained.

Summary

Applicants submit that all claims now presented are in condition for allowance and request that the Examiner reconsider the rejections made in the last Office Action.

Respectfully submitted,

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